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JAN 24 1936
PLANT

WEEKLY STATION REPORTS

OF THE DIVISION OF

DRY LAND AGRICULTURE

BUREAU OF PLANT INDUSTRY

U. S. DEPARTMENT OF AGRICULTURE

DEC 1935

Not for publication without
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REPORT FOR THE MONTH OF DECEMBER, 1935.

HAVRE:

The month was reasonably mild and continued dry. Maximum temperatures were above freezing 21 of the first 23 days, with the minimum below freezing each night but with no subzero temperatures. After the 23rd temperatures were lower with only one day above freezing. Only one night was below zero and that was -19° on the 24th.

Precipitation for the month amounted to 0.10 inch recorded on seven days, bringing the total for the year to 7.72 inches.

Soil moisture continues very deficient. Ranges are generally open with livestock in fair condition.

Maximum temperature, 50°; minimum, -19°; precipitation, 0.10 inch.

JUDITH BASIN:

December was a warm, dry month with considerable wind. Two storms during the month furnished some snow but not enough to be of any benefit to the soil moisture situation. With the exception of an occasional small drift, there was no snow on the ground at the close of the month. Soil blowing occurred on several days during the month, and considerable damage has resulted to date. The flow of water in wells continues to decline, and it has been necessary to replenish the station supply by hauling during the month.

The mean temperature for December was 31° as compared to the average of 24°. Precipitation for 1935 was 9.89 inches as compared to the average of 15.33 inches. This is the second consecutive year that the annual precipitation has been less than 10 inches.

Maximum temperature, 52°; minimum, 1°; precipitation, 0.15 inch.

HUNTLEY:

Temperatures throughout December were generally mild and wind velocity was comparatively low. Measurable precipitation during the first half of the month was confined to one light rain, and that for the last half was made up of three days of precipitation which started as rain but ended in snow. The total precipitation for the month was 0.48 inch, a deficiency of 0.33 inch from the average. Snow did not cover the ground for more than a day or two at a time and afforded only slight protection to fall-sown grains.

Winter wheat and rye seemingly have made little advance or improvement in condition over that reported at the end of November. With few exceptions the stand on commercial fields is thin and the wheat is weak. On the plots, hardly enough wheat has emerged to indicate the drill rows. Inspection, however, has shown much of the seed to be germinated and still in apparently healthy condition. The soil is frozen to the depth of seeding.

No field work was done on the dry-land plots during the month.

Maximum temperature, 57°; minimum, 5°; precipitation, 0.48 inch.

SHERIDAN:

December was mild, the mean temperature being the same as last year and the second highest yet recorded for the month at this station. There were neither any very high nor any very low temperatures, the range over the month being the second lowest yet recorded here, only 53°. A lower maximum temperature has been recorded here only in 4 years, and a higher minimum only 1 year. There was a trace of snow on the ground the most of the month. Precipitation was slightly above the average, but much of it was in the form of rain, light snow falling just frequently enough to about cover the ground each time after the most of the former snow had disappeared.

Total precipitation for the year was 13.03 inches, 2.33 inches below the station 1917 - 34 average. It was 0.03 inch above the average, 8.85 inches, for the growing season (April - August). Since 1929, however, the average annual precipitation has dropped 0.73 inch, and the seasonal 0.48 inch (including 1935).

Wind movement was low during the month, 3.3 miles per hour, 0.5 mile below the average. There was fairly heavy snow on the ground the most of the month in all directions from the station within a short distance, and within sight of the station on the west, north, and east.

Maximum temperature, 54°; minimum, 1°; precipitation, 0.52 inch.

DICKINSON:

Normal precipitation of 0.45 inch in December makes the total for 1935 15.0 inches or 0.33 inch below the 43-year average. A light rain which froze as it fell just before Christmas caused the roads to be very slippery for several days. Temperatures for the month were slightly below normal. There were five days on which below zero temperatures were recorded with a minimum of -17°. Wind velocity was about 15 miles per hour for the 24-hours on two days, but the average was near normal.

MANDAN:

Agronomy - The precipitation of 0.88 inch during December was the highest since 1918. The snowfall amounted to 8 inches. The 60-year average precipitation for December is 0.52 inch. The total precipitation for 1935 was 18.30 inches compared with the 60-year average of 16.61 inches, and the 20-year average (1914-33) of 15.78 inches.

The month of December was not extremely cold. The coldest period was the week of December 23, when the temperature dropped to -22°.

According to the U. S. Weather Bureau report for November, it was the coldest November since 1919.

	Max.	Min.	Prec.	Snowfall
November	44	-6	0.96	6.50
December	40	-22	0.88	8.00

Crested wheatgrass was the outstanding crop produced on the station during 1935. The production of hay and seed was above average. The first planting of crested wheatgrass was made on the station in 1915. This planting has produced a crop each year, and during 1935 it produced its 20th crop and 6th highest yield. The yield per acre of air-dried hay in 1935 was 2,121 pounds. The 20-year average is 1,804 pounds per acre. This planting is in 42-inch rows.

Crested wheatgrass is the only cultivated grass under trial on this station that has withstood all conditions of drought and cold, without injury. In 1935 rust was prevalent throughout this area. Many of the grasses, and especially slender wheatgrass, were badly infected with rust. No trace of rust was found on crested wheatgrass, nor has rust been found on it during the history of the grass on this station.

The production of seed on the station was one of the best of record. A total of 14 different blocks were harvested separately for seed. The blocks ranged in size from 0.1 acre to 2.5 acres, part were drilled and part were in cultivated rows. A number of the blocks were on poor locations in the field and some were on favorable locations. The average yield of all blocks was 430 pounds of clean seed per acre. The cultivated rows averaged 480 pounds per acre, and the drilled blocks averaged 393 pounds. The yield was based on what was considered as first and second grade seed. The first grade was 63 per cent by weight of the seed as it came from the thresher, and the second grade was 13 per cent. The weight per bushel of the first grade seed ranged from 22 to 25 pounds and averaged 23 pounds. The second grade seed averaged 18.6 pounds per bushel. Germination tests of the seed showed it to range from 86 to 100 per cent.

The performance of crested wheatgrass during 1935 not only confirmed previous results obtained at this station, but greatly strengthened its importance and value for use in this area.

BELLE FOURCHE:

An average amount of precipitation was received during December, but the month was somewhat warmer than usual, the mean temperature being 4° above normal. The latter half of December was considerably colder than the first half, but there were no periods of extremely cold weather, and subzero temperatures were recorded on only 2 days.

Four inches of snow, amounting to 0.31 inch precipitation, were received December 12 to 14, and cloudy, unsettled weather prevailed throughout the remainder of the month. Light snows were of frequent occurrence during this period, but the precipitation was insignificant, ranging from a trace to 0.10 inch.

Occasional high winds, including a warm chinook on December 22, occurred, but no soil movement took place. Moisture has penetrated the surface soil to a depth of 1 to 2 inches, but most of the fall seeded grain remains in dry soil. Some of the winter wheat started to germinate during a brief period of warm weather late in the month, but subsequent low temperatures stopped further growth.

Maximum temperature, 52°; minimum, -10°; precipitation, 0.46 inch.

ARCHER:

The month of December was marked by rather mild temperatures and but little precipitation. These conditions have been favorable for winter grazing, and livestock generally are in good condition. On the other hand, winter cereals are not so well favored in this section. The dry weather has held growth in check, and the rabbits are working havoc by digging up the crowns of the plants. Poison bait has been put out, and a number of rabbits have been shot.

The total precipitation for 1935 was 17.22 inches. The seasonal precipitation was 16.06 inches. This large amount is accounted for by the 7.63 inches during May.

Work at the station consisted of a continuation of work on the reservoir dam and transplanting trees. Most of the labor for this work is furnished by the W. P. A.

Maximum temperature, 55°; minimum, 1°; precipitation, 0.07 inch.

AKRON: (Report for the month of November, 1935.)

November weather was nearly ideal for outside field work. Precipitation was only about half normal, but apparently sufficient to nurture the fall seeded crops. A storm period November 27-29 brought the heaviest precipitation, 0.18 inch, and the highest wind movement, but not of a soil-blowing character.

Maximum temperature, 82°; minimum, 17°; precipitation, 0.26 inch.

AKRON: (Report for the month of December, 1935.)

December weather was a continuation of that of November. Corn gathering on the ranches has been completed, and surprisingly large piles of husked corn are to be noted all over the section. Station corn crop was only about one-third normal, but it would appear that the region had about half a normal crop. Another storm period the 14th and 15th brought the only high winds of the month and another trace of precipitation. The winter thus far has been open and mild, with a daily showing of the sun, ideal weather for the fall husking of corn and for the carrying of livestock on a minimum of feed. Mean temperatures, however, have run much lower than during the preceding two years, thus approaching more nearly normal winter temperatures for this region.

Maximum temperature, 64°; minimum, 0°; precipitation, 0.04 inch.

NORTH PLATTE:

December weather was dry and open, with no severe storms or extremes of temperature. The mean temperature was about 3° in excess of normal, the maximum 50° and minimum 1°. Precipitation was 0.27 inch, which is one-half normal. Total precipitation for the year at the Weather Bureau, Substation bench and table stations was 19.19, 23.27, and 22.03 inches respectively, making excesses for the year over the Weather Bureau normal amounting to 0.80, 4.86, and 3.64 inches, respectively.

Corn husking is practically completed. The quality is even poorer than estimated earlier, and the problem of seed corn for the coming year is a critical one.

COLBY:

December was dry and generally warm and pleasant with very little wind and considerable cloudy weather. At the beginning of the month a period of misty, foggy, and rainy weather brought 0.08 inch of moisture, and an inch of snow on the 28th brought 0.06 inch more. There was no extremely cold weather. The temperature dropped to 9° on the 21st and to 7° on the 25th, the only times it was below 10° during the month. There were four windy days but no dust storms.

The winter wheat appears to be in good condition, but it is not making any appreciable growth. The moisture which fell in November is sufficient for present needs. The ground has been frozen since in November. It is now frozen to a depth of about 5 inches. The wheat is generally frozen to the ground.

Maximum temperature, 57°; minimum, 7°; precipitation, 0.14 inch; snow, 1 inch; precipitation, 1935, 11.49 inches; 48-year average, 17.64 inches.

HAYS:

The month of December was generally dry interrupted by only a few days of more or less cloudiness which yielded only a few hundredths of moisture at a time. The weather has been generally mild with temperatures dropping to or slightly below freezing all but three nights. There were no severe storms and no zero temperatures during the month. There were no winds of more than mild to moderate velocity and not more than three or four days of these, nothing of the kind to even remind one of the dust storms of last spring. During the month the ground was open and in good condition for tillage until after the 25th, when it became frozen and remained so to the end of the month. During the last week of the month there was sufficient ice on Big Creek for ice skating, the first ice skating weather of the season.

Winter wheat looks good in the vicinity of Hays. While the weather has been mild for winter weather, it has been too cool to promote top growth, resulting in little pasture, which is disappointing to farmers short of feed; but the wheat is in ideal condition to do its maximum considering the amount of moisture present in the surface soil and the scarcity of it in the subsoil. Wheat on fallow has made slightly more growth than on cropped land, but not enough for good pasture except where seeded early. Rye sown on the project for green manure is making better growth than the wheat and would furnish considerable pasture.

Outside work on the station consisted largely of listing sorghum stubble fields for fallow, feed hauling, fence repairing and other repair work, wood cutting (cleaning out dead timber along the creek) and road work.

Maximum temperature, 60°; minimum, 10°; mean, 33.9°, the latter is about 2.5° above normal. Total precipitation, 0.20 inch, including 1 inch of snow. Total precipitation for the year, Weather Bureau records, 21.87 inches; by Dry Land Agriculture readings, April to September, inclusive, 16.86 inches, Weather Bureau readings, April to September, inclusive, 18.09 inches.

TUCUMCARI:

December was marked by no extremes of temperature, by comparatively low wind movement, low precipitation, and a large amount of clear, sunny weather. Threshing and other fall work was completed early in the month.

Precipitation of 0.24 inch brought the total for 1935 to 12.88 inches as compared with the 30-year average of 16.63 inches. Crop yields in some instances exceeded the long-time average, with comparatively few Dry Land plots yielding much below the all time average.

Grain sorghums in the cooperative block were low in respect to other station crops, both main plantings of the variety-date test suffering intensely from drought at critical stages of development.

Owing to the unusually favorable fall weather, livestock are in good condition and promise to winter well on the surprisingly good growth of native range grass. The recovery of all ranges in this locality after the extremely dry year of 1934 was remarkable. On the plains portion of the county wheat is generally good, with considerable pasturing taking place.

Maximum temperature, 64°; minimum, 20°.

DALHART:

December furnished mild, open winter weather. The mean temperature for the month was 2° above normal; there were no extreme fluctuations in daily maximum and minimum temperatures; the actual maximum temperature was 61° and the minimum was 16°. Total wind movement was moderate, in fact the average hourly wind velocity was among the lowest on record for the month. The precipitation of 0.08 inch was negligible. Threshing of sorghums and other outside field work was completed during the month. The winter wheat and rye, which were seeded late, still show only scattered germination and emergence. There was no soil blowing.

Milo yields on the rotations were considerably below average. The average yield of the milo rotations was 11.1 bushels per acre. Yields of kafir came nearer to the average yields for two reasons -- the seasonable distribution of rainfall was more favorable and the response was better to the late rains. The average kafir yield on the rotations was 16.9 bushels per acre.

On account of almost complete failures of sorghums to produce grain and due to immaturity of much of the sorghum grain, a rather large percentage of sorghums have been harvested in this section by grazing. Cattlemen have made arrangements with farmers whereby the farmer was paid a definite amount of money per month for each head of cattle which he let graze upon his fields. Good gains are reported and especially so where there was wheat pasture to supplement the stalk fields. One cattleman said this morning that he secured a net gain of 134 pounds per head for 300 yearling heifers for 70 days. As he had had a bid on these cattle before starting the pasturing and as he sold them immediately when the pasturing was completed, at the same bid price as at the start of the pasturing period, his net profit of slightly more than $4.00 per head was rather accurately computed. These high quality heifers were in good condition when they entered the sorghum stalk field. The pasturing in this case was done within about a mile of the station.

The precipitation for 1935 was 13.31 inches, which is approximately 74 per cent of 18.00 inches, the average for the past 28 years. The immediate past year ranked fourth for low annual precipitation. The three lowest are 1934 with 9.78 inches, 1933 with 10.14 inches, and 1917 with 10.79 inches. There have now been 10 years during the past 28 for which the total precipitation has been less than 15 inches for the year. The annual precipitation average for the past five years is 13.40 inches, which shows why this section has been rather aptly dubbed the 'dust bowl'.

BIG SPRING:

The rainfall for the month of December, consisting of 0.46 inch, brought the total for the year to 25.95 inches, or about 7 inches above normal. About 10 inches of this fell during May and June and 6 during September and October. With this distribution the crop yields were not commensurate with amount of rainfall received.

Weather conditions during the past month have been rather unfavorable for much field work. Cold, cloudy, damp weather prevailed to such an extent that only a few days at a time were favorable for such work as cotton picking and feed stacking. A considerable part of the cotton was just far enough advanced at the time of the first freeze so that the bolls have only partly opened since. Picking cotton in this condition is a very slow job. Under general farm conditions these bolls would all be pulled and let the gin do the separating.

Threshing of sorghums in the rotations and the sorghum varieties was completed during the early part of the month. Other work has consisted of stacking Sumac and other bundle feed.

Maximum temperature, 72°; minimum, 22°; precipitation, 0.46 inch.

LAWTON:

Comparatively mild temperatures that produced a monthly average equal to the December normal, the absence of severe storms, and a slight excess of precipitation were distinctive features of December weather. Wet, cloudy weather prevailed from the 4th to the 7th and from the 28th to the 31st, when the total monthly precipitation of 1.68 inches fell. The remainder of the month was clear and dry, and farmers just about completed harvest of the 1935 cotton crop. In many instances late fields of feed were harvested and stored for winter use.

Precipitation to the extent of 7.61 inches from October 1 to December 31 provided better soil moisture conditions for the winter period than has obtained for several years. The yearly precipitation of 27.25 inches was 3.6 inches below normal. The minimum temperature for December, 15°, was recorded on the 25th.

A light flurry of snow fell on the 28th, the first to be recorded since February 7, 1933.

WOODWARD:

The fore part of December was characterized by cool, foggy weather with frequent slight precipitation and the latter half by cool, partially cloudy weather, with no very low temperatures and little high wind for the month. Due to cool, cloudy weather over the past three months, wheat has made very little growth, despite ample moisture in the surface few feet. There has been practically no wheat pasture, and there has been little use of moisture by wheat. There will be a good reserve of moisture for wheat to make spring growth on. Slight top growth of wheat is general clear across the Plains from Enid, Okla., to Dalhart, Tex., and Clovis, N. Mex. Soil drifting in incipient stages was rather general in the western half of the Texas Panhandle on the sandier soils and because there is so little cover will likely wipe out large acreages. There was one condition so often recurrent that it seemed the rule. Wherever there was a farmer who seemed to have taken particular pains to put his soil in condition to not blow, he seemed to have a neighbor particularly negligent in this respect. One of the worst hazards to winter wheat production in the dust bowl is neighbors.

Station work during December consisted largely of harvesting and threshing sorghums, trapping gophers, pruning grapes, planting trees, making ornamental cuttings, and cleaning seed.

Maximum temperature, 65°; minimum, 13°; precipitation, 0.35 inch.

PENDLETON:

The month of December was generally cool, damp, and cloudy with only 5 clear days. Low or high fog occurred on 17 days, with temperatures below freezing. The fog collected on trees and wires and many limbs and wires were broken by the weight of the accumulated frozen fog. Some disruption of power and telephone service occurred.

Precipitation for December was 1.41 inches, which was 0.64 inch less than the 7-year average. The precipitation for the calendar year was 10.57 inches, the lowest recorded since the establishment of the station. The precipitation in the city of Pendleton was 8.79 inches, or 62 per cent of normal.

The fall sown wheat has not emerged, although in most fields it is about ready to break through to the surface, a few warm days would soon bring it to the surface. The surface soil was frozen most of the month, and no field work of any consequence was done.

The Eastern Oregon Wheat League held their ninth annual meeting in Pendleton, on December 6 and 7. About 500 farmers from the wheat counties in eastern Oregon were in attendance.

Thousands of wild geese have been feeding in the fields surrounding the station for the past month, on the volunteer, shattered, and newly sprouted fall sown wheat. Where the geese are feeding on the fall sown wheat, the surface soil is packed hard and smooth. During the hunting season there were only a few geese and ducks in this area. Since the season closed there has been an unusually large number of both ducks and geese.

Maximum temperature, 50°; minimum, 19°; precipitation, 1.41 inches;
Mean temperature, 32.8°; Precipitation, 1935, 10.57 inches.

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